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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/032,035	12/31/2001	Keizo Ohnishi	217662US3	5168

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EXAMINER

KIM, TAE JUN

ART UNIT	PAPER NUMBER
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3746

DATE MAILED: 12/10/2003

12

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/032,035

Applicant(s)

OHNISHI ET AL.

Examiner

Ted Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-6 and 8-20 is/are pending in the application.
- 4a) Of the above claim(s) 2-6, 8-11, 13-16 and 18-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. Claims 12, 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Johnson et al (5,417,056). Johnson et al teach a gas turbine combustor acoustic absorbing wall configured to absorb acoustic energy of a combustion variation, the acoustic energy absorbing wall (col. 5, lines 44-57) that can absorb the acoustic energy of a combustion variation generated within the combustor. The acoustic energy absorbing member is constructed of a perforated plate 49, 200 (Fig. 7, col. 6, lines 15-17) and a back plate 161 disposed outside in a radial direction; cooling air is introduced into the gap (col. 6, lines 11+) there between. The distances L1 (longitudinal) and L2 (circumferential) between the openings on the perforated plate are illustrated and/or disclosed as having a relationship of L1/L2 in the claimed range (see Fig. 7).

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3. Claims 12, 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Vdovjak et al (4,833,881). Vdovjak et al teach a gas turbine combustor acoustic absorbing wall configured to absorb acoustic energy of a combustion variation, the acoustic energy absorbing wall (col. 5, lines 30-32) that can absorb the acoustic energy of a combustion variation generated within the combustor. The acoustic energy absorbing member is constructed of a perforated plate 90, 92 (Fig. 7, col. 6, lines 15-17) and a back plate 94 disposed outside in a radial direction; cooling air 100 is introduced into the gap there between. The distances L1 (longitudinal) and L2 (circumferential) between the openings on the perforated plate are clearly illustrated as having a relationship of $L1/L2$ in the claimed range (see Fig. 4 or 5).

4. Claims 12, 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Cowan et al (4,199,936). Cowan et al teach a gas turbine combustor (the embodiments of Fig. 2 or Fig. 3 or Fig. 4) acoustic absorbing wall configured to absorb acoustic energy of a combustion variation, the acoustic energy absorbing wall that can absorb the acoustic energy of a combustion variation generated within the combustor. The acoustic energy absorbing member is constructed of a perforated plate with perforations 27 or 28 (or 53, 56 – Fig. 4) and a back plate 22 disposed outside in a radial direction; cooling air is introduced into the gap therebetween. The distances L1 (longitudinal) and L2 (circumferential) between the openings 27 or 28 (or 53, 56 – Fig. 4) on the perforated plate are illustrated and/or disclosed as having a relationship of $L1/L2$ in the claimed range.

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5. Claims 12, 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Sattinger et al (6,530,221). Sattinger et al teach a gas turbine combustor (the embodiment of Fig. 3 or Fig. 4 or Fig. 5) acoustic absorbing wall configured to absorb acoustic energy of a combustion variation, the acoustic energy absorbing wall that can absorb the acoustic energy of a combustion variation generated within the combustor. The acoustic energy absorbing member is constructed of a perforated plate 52 and a back plate 50 disposed outside in a radial direction; cooling air is introduced into the gap therebetween. The distances L1 (longitudinal) and L2 (circumferential) between the openings 54 (see Fig. 2B or Fig. 5B) on the perforated plate are illustrated and/or disclosed as having a relationship of L1/L2 in the claimed range.
6. Claims 17 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 0576717. EP '617 teach acoustic absorbing wall configured to absorb acoustic energy of a combustion variation, the acoustic energy absorbing wall 21 is formed with an acoustic energy absorbing member that can absorb the acoustic energy of a combustion variation generated within the combustor. The acoustic energy absorbing member is constructed of a perforated plate 19 and a back plate 18 disposed outside in a radial direction; cooling air 23 is introduced into the gap therebetween.
7. Claims 12, 17 are rejected under 35 U.S.C. 102(b) as being anticipated by GB 2309296 of the IDS. GB '296 teaches a gas turbine combustor acoustic absorbing wall configured to absorb acoustic energy of a combustion variation, the acoustic energy absorbing wall that can absorb the acoustic energy of a combustion variation generated

within the combustor. The acoustic energy absorbing member is constructed of a perforated plate 104 and a back plate 109 disposed outside in a radial direction; cooling air is introduced into the gap therebetween. The distances L1 (longitudinal) and L2 (circumferential) between the openings 113 on the perforated plate are illustrated and/or disclosed as having a relationship of L1/L2 in the claimed range.

8. Claims 12, 17 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by JP 2001-90939 of the IDS. While the publication date is after applicant's priority date, it is noted that Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 12, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over any of Johnson et al (5,417,056), Vdovjak et al (4,833,881), Cowan et al (4,199,936), Sattinger et al (6,530,221), EP 0971172 or GB 2309296, as applied above and further in view of Napoli (5,279,127). The prior art teach various aspects of the claimed invention and illustrate the claimed range for the spacing between the openings in the perforated

plate. In order to remove any ambiguity, Napoli is cited to teach that it is old and well known in the art to space the holes 80 (Fig. 5) in a perforated plate in a substantially constant spacing for an even distribution (col. 5, lines 55-60) – which falls within the claimed range by having an $L1/L2$ of 1. It would have been obvious to one of ordinary skill in the art to employ substantially even spacing, as taught by Napoli, as being old and well known for combustor walls, in order to facilitate ease of manufacture and/or low cost. Alternately, as each of the applied prior art illustrate the claimed range, it would have been obvious to employ the claimed range as being an obvious matter of using the workable ranges in the art.

11. Claims 12, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable EP 0971172 of the IDS in view of Vdovjak et al (4,833,881) or Johnson et al (5,417,056). EP '172 teach a gas turbine combustor acoustic absorbing wall configured to absorb acoustic energy of a combustion variation, the acoustic energy absorbing wall that can absorb the acoustic energy of a combustion variation generated within the combustor. The acoustic energy absorbing member is constructed of a perforated plate 27 and a back plate 24 disposed outside in a radial direction; cooling air is introduced into the gap therebetween. The spacing of the perforations is not illustrated. However, Vdovjak et al and Johnson each illustrate a perforated acoustic absorbing wall where the perforations are substantially evenly distributed in the longitudinal and circumferential directions, which yields a $L1/L2$ of about 1 – which is well within the claimed range. It would have been obvious to one of ordinary skill in the art to evenly space the perforations in the

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longitudinal and circumferential directions, as being a commonly employed range used in the art.

Response to Amendment

12. The rejection with Lewis et al has been overcome by the amendment to the claims. The arguments filed 10/27/03 have not been found persuasive with respect to the other art applied. Applicant alleges that the references do not teach the claimed relationship of $L1/L2$ of $0.25 \leq L1/L2 \leq 4$. This line of argumentation is not found persuasive as the prior art of record clearly illustrate the spacing between the perforations in the liners. When considering that some of these references illustrate a substantially even spacing in both the longitudinal and circumferential directions, it is clear that such a relationship of $L1/L2$ would be about 1, which is well within the claimed range. Clearly, even if the specifications does not explicitly state what the $L1$ and $L2$ relationships are, the drawings unequivocally show what a contemplated embodiment of the perforations would be – which read on the claimed range. Even in the event that applicant would not find such reasoning persuasive, it is clear that an even spacing of perforations is clearly within the ordinary skill of the art, as evidenced by Napoli. It would have been obvious to one of ordinary skill in the art to employ substantially even spacing, as taught by Napoli, as being old and well known for combustor walls, in order to facilitate ease of manufacture and/or low cost. Alternately, as each of the applied prior art illustrate the claimed range of $L1/L2$, it would have been completely obvious to employ the illustrated range as being an obvious matter of using the workable ranges in the art contemplated by the prior art.

13. Applicant's arguments with regard to Napoli are not persuasive, as Napoli was cited to teach that it is old and well known in the art to space the holes 80 (Fig. 5) in a perforated plate in a substantially constant spacing for an even distribution (col. 5, lines 55-60) – which falls within the claimed range by having an L1/L2 of 1. Consequently, even though Napoli is not directed to acoustic absorption, it is directed to perforated combustion liners, in which applicant's claimed range is demonstrably utterly conventional.

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Ted Kim whose telephone number is 703-308-2631. The Examiner can be reached on regular business hours before 5:00 pm, Monday to Thursday and every other Friday.


The fax numbers for the organization where this application is assigned are 703-872-9306 for Regular faxes and 703-872-9306 for After Final faxes.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Justine Yu, can be reached on 703-308-2675.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist of Technology Center 3700, whose telephone number is 703-308-0861.

General inquiries can also be directed to Technology Center Customer Service Office at 703-306-5648 or the Patents Assistance Center whose telephone number is 800-786-9199. Furthermore, a variety of online resources are available at

<http://www.uspto.gov/main/patents.htm>



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